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A Preliminary List of the Species of the Genus Meibomia, Heist., occurring in the United States and British America.

By Anna M. Vail.

The genus *Hedysarum* in Linnæus' Genera Plantarum, ed. i. 225, published in 1737, and referred by him to Tournefort, comprised *Onobrychis*, *Hedysarum*, *Alhagi* and *Meibomia*. The first reference to *Meibomia*, as distinct from *Hedysarum*, that I have found is in the second edition of Ludwig's Definitiones Generum Plantarum, 156, (1747). I have not access to the first edition of that work. According to Dr. Otto Kuntze, the genus was founded by Möhring (Hort. Priv. 65, 1736), and referred by him to Heister one year ahead of the Linnæan Genera Plantarum.

According to the same author it was used by Manetti in 1751 and by Fabricius in 1753, and to these it may be added by Adanson (Fam. Pl. ii. 509) in 1763. Siegesbeck called it *Hedysarodes* in 1736, but I have not found that name used subsequent to 1737.

St. Hilaire named the genus *Pleurolobus* in 1812, and *Phyllodium* and *Desmodium*, Desvaux, appeared in 1813.

The genus *Desmodium* was elaborated by DeCandolle in the second volume of the Prodromus in 1825, and the North American species of the genus in the first volume of Torrey & Gray's Synoptical Flora in 1838, and they have been followed by all recent writers.

Thirty-nine species are enumerated in this list, which is an attempt to straighten out the rather complicated synonymy of the genus. The species of the Southwestern States are as yet

little understood, and a more extensive exploration of Arizona, Texas and New Mexico will doubtless reveal new or Mexican species within our borders, and perhaps change the status of some here recognized.

My thanks are due to Dr. N. L. Britton for his help and many valuable suggestions, and also to Captain John Donnell Smith, Mr. Redfield, Dr. Sereno Watson and Prof. Macoun for their kindness in loaning their collections to me for examination.

§ 1. Pods constricted into separate semi-rhomboidal joints.

† Pod not constricted above, deeply constricted below, long-stiped; leaflets broad.

* Panicle arising from the base of the plant.

1. MEIBOMIA NUDIFLORA, (L.)

Hedysarum nudiflorum, L. Spec. Pl. 749 (1753).
Desmodium nudiflorum, DC. Prodr. ii. 330 (1825).
Meibomia nudiflora, O. Kuntze, Rev. Gen. Plant. i. 197 (1891).
Distr.—Ontario to Florida, west to Missouri and Louisiana.

** Panicle arising from the summit of the plant, leaves crowded at its base.

2. MEIBOMIA GRANDIFLORA (Walter).

Hedysarum grandiflorum, Walter, Fl. Car. 185 (1788).
Hedysarum glutinosum, Mühl. in Willd. Spec. iii. 1198 (1803).
Hedysarum acuminatum, Michx. Fl. Bor. Am. ii. 72 (1803).
Desmodium acuminatum, DC. Prodr. ii. 329 (1825).
Desmodium grandiflorum, DC. Prodr. ii. 338 (1825).
Meibomia grandiflora, O. Kuntze, Rev. Gen. Plant. i. 196 (1891).
Distr.—Ontario to Florida, west to Minnesota, Nebraska and Texas.

*** Panicle terminal, leaves scattered.

3. MEIBOMIA PAUCIFLORA, (Nutt.)

Hedysarum pauciflorum, Nuttall, Gen. ii. 109 (1818).
Desmodium pauciflorum, DC. Prodr. ii. 330 (1825).
Meibomia pauciflora, O. Kuntze, Rev. Gen. Pl. i. 198 (1891).
Distr.—New York to Florida, west to Missouri and Louisiana.

†† Pod slightly constricted above, much constricted below, joints rhomboidal or semi-rhomboidal.

‡ Trailing or reclining vines.

* Leaflets orbicular or nearly so (except in *M. lineata*, var. *polymorpha*).

‖ Leaflets 1′ or less long, racemes simple, elongated, leafless.

4. MEIBOMIA LINEATA, (Michx.)

Hedysarum lineatum, Michx. Fl. Bor. Am. ii. 72 (1803).

Desmodium lineatum, DC. Prodr. ii. 330 (1825).

Meibomia lineata, O. Kuntze, Rev. Gen. Plant. i. 196 (1891).

Distr.—Maryland to Florida, west to Louisiana.

Var. POLYMORPHA (A. Gray).

Desmodium lineatum, var. *polymorphum*, A. Gray, in A. H. Curtiss' distr. Florida plants, No. 621*. Leaves varying from nearly linear to oblong, otherwise with the characters of the species.

Distr.—Florida and Louisiana.

|| Leaflets 1–2' long, often broader than long, hairy, lighter beneath.

5. MEIBOMIA ROTUNDIFOLIA, (Michx.)

Hedysarum rotundifolium, Michx. Fl. Bor. Am. ii. 72 (1803).

Desmodium rotundifolium, DC. Prodr. ii. 330 (1825).

Meibomia rotundifolia, O. Kuntze, Rev. Gen. Plant. i, 197 (1891).

Var. *glabrata*, A. Gray, Man. ed. v. 135 (1867), is a smooth form of *M. rotundifolia*, which, however, is most variable as to hairiness.

Distr.—Ontario to Florida, west to Missouri and Louisiana.

** Leaflets ovate or oval, racemes terminal and axillary.

| Corolla whitish, stipules ovate, raceme nearly simple, leaves yellowish green, reticulate, pods twisted.

6. MEIBOMIA OCHROLEUCA (M. A. Curtis).

Hedysarum humifusum, Muhl. Cat. 69, in part (1813), fide S. Watson's Biblio. Index, i. 217.

Desmodium ochroleucum, M. A. Curtis, in Canby, Proc. Acad. Philad. 1864, 17.

Meibomia ochroleuca, O. Kuntze, Rev. Gen. Plant. i. 198 (1891.)

Distr.—Delaware, Maryland, North Carolina and Florida.(?)

|| Corolla purple, stipules subulate, racemes panicled, sometimes simple, leaves lighter beneath.

7. MEIBOMIA GLABELLA, (Michx.)

Hedysarum glabellum, Michx. Fl. Bor. Am. ii. 73 (1803).

Hedysarum humifusum, Muhl. Cat. 69, in part (1813), fide S. Watson's Biblio. Index, i. 217.

Desmodium humifusum, Beck, Bot. 86 (1833).

Meibomia glabella, O. Kuntze, Rev. Gen. Plant. i. 198 (1891).

Meibomia humifusa, O. Kuntze, Rev. Gen. Plant.i. 198 (1891).

Distr.—Massachusetts to North and South Carolina.

‡‡ Herbs erect or ascending.

* Leaves sessile or very short petioled, lanceolate, loment 2–3 jointed, plant pubescent.

8. MEIBOMIA SESSILIFOLIA (Torrey).

Hedysarum sessilifolium, Torrey, in Curtis' Enum. Pl. Wilmington, Boston Journ. Nat. Hist. i. 123 (1834); excluding variety.

Desmodium sessilifolium, Torrey & Gray, Fl. ii. 363 (1838).

Meibomia sessilifolia, O. Kuntze, Rev. Gen. Plant. i. 198 (1891).

Distr.—Massachusetts to Kentucky, west to Michigan, Kansas and Texas.

** Leaves petioled, leaflets linear, pods small.

9. MEIBOMIA STRICTA (Pursh).

Hedysarum strictum, Pursh, Fl. Am. Sept. 483 (1814).

Hedysarum paniculatum, Michx. Fl. Bor. Am. ii 74 (1803), not of L.

Desmodium strictum, DC. Prodr. ii. 329 (1825).

Meibomia stricta, O. Kuntze, Rev. Gen. Plant. i. 198 (1891)

Possibly not distinct from the next.

Distr.—New Jersey to Florida, west to Missouri and Louisiana.

10. MEIBOMIA TENUIFOLIA (T. & G.).

Hedysarum sessilifolium, var. *angustifolium*, Torr. in Curtis' Enum. Pl. Wilmington, Boston Journ. Nat. Hist. i. 123 (1834). Not *M. angustifolia* (H.B.K.)

Desmodium tenuifolium, T. & G. Fl. i. 363 (1838).

Meibomia tenuifolia, O. Kuntze, Rev. Gen. Plant. i. 198 (1891).

Differing from *M. stricta* in its looser inflorescence, less rigid habit and its smaller loment, which is nearly sessile in the calyx, and the joints of which are not at all concave on the back.

Distr.—Missouri, Florida, Alabama and Louisiana.

*** Leaves petioled; leaflets ovate, ovate-lanceolate or lanceolate.

‖ Joints of the loment longer than broad.

o Leaflets ovate, obtuse; scabrous above, pubescent and reticulate beneath.

11. MEIBOMIA CANESCENS (L.).

Hedysarum canescens, Linn. Spec. Plant. 748 (1753).

Hedysarum viridiflorum, Willd. Spec. iii. 1192 (1803), not Linn.

Hedysarum scaberimum, Elliott, Sk. ii. 217 (1824).
Desmodium canescens, DC. Prodr. ii. 328 (1825).
Desmodium viridiflorum, DC. Prodr. ii. 329 (1825). exclu. syn.
Desmodium Aikinianum, Beck. Bot. 84 (1833).
Hedysarum Aikinii, Eaton's Man. ed. vii. 325 (1836).
Meibomia canescens, O. Kuntze, Rev. Gen. Plant. i. 195 (1891).
Distr.—Ontario to Florida, west to Nebraska and Texas.

Varying greatly in the size of the leaves and in the hairiness of the panicles, the extreme form of which is

Var. HIRSUTA (Hooker).

Desmodium Canadense, var. *hirsuta*, Hooker Comp. Bot. Mag. i. 22 (1835).
Desmodium canescens, var. *villosissimum*, T. & G. Fl. i. 365 (1838).
Distr.—Missouri, St. Louis, T. Drummond. The Drummond specimens in Herb. Torrey are without fruit.

°° Leaflets ovate-rhomboid, velvety pubescent beneath.

12. MEIBOMIA LINDHEIMERI (A. M. Vail).

Desmodium Lindheimeri, A. M. Vail, Bull. Torr. Bot. Club, xviii. 120 (1891).
Distr.—Texas and Mexico. Type Lindheimer, No. 499, from New Braunfels.

°°° Leaflets ovate, sometimes rhomboid, acuminate, glabrous, flowers and bracts large, the latter deciduous.

13. MEIBOMIA BRACTEOSA (Michx.).

Hedysarum bracteosum, Michx. Fl. Bor. Am. ii 73 (1803).
Hedysarum cuspidatum, Mühl. in Willd. Spec. Plant. iii. 2, 1198 (1803), not 1800, fide O. Kuntze, Rev. Gen. Plant. i. 134.
Desmodium bracteosum, DC. Prodr. ii. 329 (1825).
Desmodium cuspidatum, Hooker Comp. Bot. Mag. i. 23 (1835).
Desmodium Canadense, L. var. *longifolium*, T. & G. Fl. i 365 (1838).
Meibomia bracteosa, O. Kuntze, Rev. Gen. Plant. i. 195 (1891).
Distr.—Ontario to Florida, west to Michigan, Missouri and Texas.

‖‖ Joints of the loment little longer than broad.

° Loment distinctly stalked in the calyx.

¶ Plants glabrous or nearly so (except *M. paniculata*, var. *pubens*).

÷ Leaflets lanceolate or oval.

14. MEIBOMIA PANICULATA (L.).

Hedysarum paniculatum, Linn. Spec. 749 (1753).

Desmodium paniculatum, DC. Prodr. ii. 329 (1825)

Meibomia paniculata, O. Kuntze, Rev. Gen. Plant. i. 198 (1891).

Distr.—Ontario to Florida, west to Nebraska, and Louisiana and Texas.

Var. ANGUSTIFOLIUM (T. & G.).

Desmodium paniculatum, var. *angustifolium*, T. & G. Fl. i. 364 (1838).

There are intermediate forms between this variety and the species.

Distr.—Florida and Texas.

Var. PUBENS (T. & G.).

Desmodium paniculatum, var. *pubens*, T. & G. Fl. i, 364 (1838).

Desmodium pubens, Young, Fl. Texas, 233 (1873).

The typical *M. paniculata* of the Eastern States is glabrous; the western form is pubescent, and there are intermediate forms between *M. Dillenii* and var. *pubens*, which latter is possibly a species.

Distr.—Florida to Texas and New Mexico.

÷÷ Leaflets thick, broadly ovate or ovate-rhomboid, lighter beneath.

15. MEIBOMIA LÆVIGATA (Nutt.).

Hedysarum lævigatum, Nutt. Gen. ii. 109 (1818).

Desmodium lævigatum, DC. Prodr. ii. 329 (1825).

Meibomia lævigata, O. Kuntze, Rev. Gen. Plant. i. 198 (1891).

Distr.—Pennsylvania to Florida, west to Missouri, Louisiana and Texas.

Var. *monophylla*, Wood, Bot. and Fl. 88 (1870). I have not seen anything answering this description. It is not at all unusual for depauperate plants of the genus to run to unifoliolate leaflets.

¶¶ Plants more or less pubescent.

÷ Leaflets broad, velvety pubescent beneath; joints of the loment 2″ long.

16. MEIBOMIA VIRIDIFLORA (L.).

Hedysarum viridiflorum, Linn. Spec. Plant. 748 (1753).

Desmodium viridiflorum, Beck. Bot. 84 (1833), not DC.
Meibomia viridiflora, O. Kuntze, Rev. Gen. Plant. i. 197 (1891).
Distr.—New York to Florida, west to Missouri and Texas.

÷÷ Leaflets broad, thin, appressed pubescent beneath; stem striate, glabrous or finely pubescent, sometimes ciliate.

17. MEIBOMIA DILLENII (Darl.).

Hedysarum Marilandicum, Willd. Spec. iii. 1189 (1803), not Linn.
Desmodium Marylandicum, DC. Prodr. ii. 328 (1825).
Desmodium Dillenii, Darl. Fl. Cestrica, 414 (1837).
Desmodium Boottii, Torrey in Curtis' Enum. Pl. Wilmington, Boston Journ. Nat. Hist. i. 93 (1834).
Meibomia Dillenii, O. Kuntze, Rev. Gen. Plant. i. 195 (1891).
Dist.—Ontario to Florida, west to Nebraska and Texas.

°° Loment sessile in the calyx, or nearly so; leaves more or less strongly reticulate beneath.

¶ Joints of the loment 2–4.

÷ Lower leaves 1-foliolate; leaflets villose or rugose, pubescent beneath, panicles long, leafless.

18. MEIBOMIA RHOMBIFOLIA (Elliott).

Hedysarum rhombifolium, Elliott, Sk. ii. 216 (1824).
Desmodium rhombifolium, DC. Prodr. ii. 330 (1825).
Desmodium Floridanum, Chapm. Fl. 102 (1860).
Meibomia Floridana, O. Kuntze, Rev. Gen. Plant. i. 198 (1891).

The specimen labelled *D. rhombifolium*, Ell. in Dr. Torrey's hand, is identical with what is now known as *D. Floridana*, Chapm. The latter varies somewhat in the pubescence of the under surface of the leaflets, and there are apparently intermediate forms between it and *M. lævigata*.

Distr.—Virginia to Florida, west to Louisiana.

÷÷ Leaflets 3-4′ long, scabrous beneath, broadly truncate at the base.

19. MEIBOMIA TWEEDYI (Britton).

Desmodium Tweedyi, Britton, Trans. New York Acad. Sciences, vii. 183 (1890).

Mature fruit not known.

Distr.—Texas. Tom Greene Co., Frank Tweedy, 1879.

‖‖ Joints of the loment little longer than broad.

° Loment distinctly stalked in the calyx.

¶ Plants glabrous or nearly so (except *M. paniculata*, var. *pubens*).

÷ Leaflets lanceolate or oval.

14. MEIBOMIA PANICULATA (L.).

Hedysarum paniculatum, Linn. Spec. 749 (1753).

Desmodium paniculatum, DC. Prodr. ii. 329 (1825)

Meibomia paniculata, O. Kuntze, Rev. Gen. Plant. i. 198 (1891).

Distr.—Ontario to Florida, west to Nebraska, and Louisiana and Texas.

Var. ANGUSTIFOLIUM (T. & G.).

Desmodium paniculatum, var. *angustifolium*, T. & G. Fl. i. 364 (1838).

There are intermediate forms between this variety and the species.

Distr.—Florida and Texas.

Var. PUBENS (T. & G.).

Desmodium paniculatum, var. *pubens*, T. & G. Fl. i. 364 (1838).

Desmodium pubens, Young, Fl. Texas, 233 (1873).

The typical *M. paniculata* of the Eastern States is glabrous; the western form is pubescent, and there are intermediate forms between *M. Dillenii* and var. *pubens*, which latter is possibly a species.

Distr.—Florida to Texas and New Mexico.

÷÷ Leaflets thick, broadly ovate or ovate-rhomboid, lighter beneath.

15. MEIBOMIA LÆVIGATA (Nutt.).

Hedysarum lævigatum, Nutt. Gen. ii. 109 (1818).

Desmodium lævigatum, DC. Prodr. ii. 329 (1825).

Meibomia lævigata, O. Kuntze, Rev. Gen. Plant. i. 198 (1891).

Distr.—Pennsylvania to Florida, west to Missouri, Louisiana and Texas.

Var. *monophylla*, Wood, Bot. and Fl. 88 (1870). I have not seen anything answering this description. It is not at all unusual for depauperate plants of the genus to run to unifoliolate leaflets.

¶¶ Plants more or less pubescent.

÷ Leaflets broad, velvety pubescent beneath; joints of the loment 2″ long.

16. MEIBOMIA VIRIDIFLORA (L.).

Hedysarum viridiflorum, Linn. Spec. Plant. 748 (1753).

Desmodium viridiflorum, Beck. Bot. 84 (1833), not DC.
Meibomia viridiflora, O. Kuntze, Rev. Gen. Plant. i. 197 (1891).
Distr.—New York to Florida, west to Missouri and Texas.

÷÷ Leaflets broad, thin, appressed pubescent beneath; stem striate, glabrous or finely pubescent, sometimes ciliate.

17. MEIBOMIA DILLENII (Darl.).

Hedysarum Marilandicum, Willd. Spec. iii. 1189 (1803), not Linn.
Desmodium Marylandicum, DC. Prodr. ii. 328 (1825).
Desmodium Dillenii, Darl. Fl. Cestrica, 414 (1837).
Desmodium Boottii, Torrey in Curtis' Enum. Pl. Wilmington, Boston Journ. Nat. Hist. i. 93 (1834).
Meibomia Dillenii, O. Kuntze, Rev. Gen. Plant. i. 195 (1891).
Dist.—Ontario to Florida, west to Nebraska and Texas.

°° Loment sessile in the calyx, or nearly so; leaves more or less strongly reticulate beneath.

¶ Joints of the loment 2–4.

÷ Lower leaves 1-foliolate; leaflets villose or rugose, pubescent beneath, panicles long, leafless.

18. MEIBOMIA RHOMBIFOLIA (Elliott).

Hedysarum rhombifolium, Elliott, Sk. ii. 216 (1824).
Desmodium rhombifolium, DC. Prodr. ii. 330 (1825).
Desmodium Floridanum, Chapm. Fl. 102 (1860).
Meibomia Floridana, O. Kuntze, Rev. Gen. Plant. i. 198 (1891).

The specimen labelled *D. rhombifolium*, Ell. in Dr. Torrey's hand, is identical with what is now known as *D. Floridana*, Chapm. The latter varies somewhat in the pubescence of the under surface of the leaflets, and there are apparently intermediate forms between it and *M. lævigata*.

Distr.—Virginia to Florida, west to Louisiana.

÷÷ Leaflets 3-4′ long, scabrous beneath, broadly truncate at the base.

19. MEIBOMIA TWEEDYI (Britton).

Desmodium Tweedyi, Britton, Trans. New York Acad. Sciences, vii. 183 (1890).

Mature fruit not known.

Distr.—Texas. Tom Greene Co., Frank Tweedy, 1879.

¶ ¶ Joints of the loment, 4-7.

+ Loments prominently in pairs; leaflets oblong or oblong-lanceolate, villose beneath.

20. MEIBOMIA ILLINOENSIS (A. Gray).

Desmodium Illinoensis, A. Gray, Proc. Am. Acad. viii. 289 (1870).

Meibomia Illinoensis, O. Kuntze, Rev. Gen. Plant. i. 198 (1891).

Distr.—Illinois, Nebraska and Kansas.

° ° ° Loment sessile in the calyx or nearly so; leaves not reticulate beneath.

¶ Joints 4-7; leaves short petioled.

+ Stipules subulate, leaflets pubescent, upper leaves sessile.

21. MEIBOMIA CANADENSIS (L.).

Hedysarum Canadense, Linn. Spec. Pl. 748 (1753).

Hedysarum scabrum, Mœnch, Meth. 118 (1794).

Desmodium Canadense, DC. Prodr. ii. 328 (1825).

Meibomia Canadensis, O. Kuntze, Rev. Gen. Plant. i. 195 (1891).

Dist.—Ontario to North Carolina, west to Saskatchawan, Nebraska and Kansas.

¶ ¶ Joints 1-3, small.

+ Leaflets scabrous, sometimes reticulate beneath, 1-2′ long.

22. MEIBOMIA RIGIDA (Elliott).

Hedysarum rigidum, Elliott, Sk. ii. 215 (1824).

Desmodium rigidum, DC. Prodr. ii. 330 (1825).

Meibomia rigida, O. Kuntze, Rev. Gen. Plant. i. 198 (1891).

Distr.—Massachusetts to Florida, west to Nebraska, Arkansas and Texas.

+ + Leaflets 6-10″ long, glabrous.

23. MEIBOMIA MARYLANDICA (L.).

Hedysarum Marilandicum, Linn. Spec. Plant. 748 (1753) in part.

Hedysarum obtusum, Pursh. 482 (1814), not Mühl.

Desmodium obtusum, DC. Prodr. ii. 329 (1825).

Desmodium Marilandicum, Boott in Darlington Fl. Cestrica, ed. ii. 412 (1837), not DC.

Meibomia Marilandica, O. Kuntze, Rev. Gen. Plant. i. 198 (1891).

Distr.—Massachusetts to Florida, west to Missouri and Arkansas.

+++ Leaflets 6-10″ long, stems and leaflets ciliate.

24. MEIBOMIA OBTUSA (Mühl.).

Hedysarum obtusum, Mühl. in Willd. Spec. iii. 1190 (1803).

Hedysarum ciliare, Mühl. in Willd. Spec. iii. 1196 (1803).

Desmodium ciliare, DC. Prodr. ii. 329 (1825).

Distr.—Ontario to Florida, west to Missouri, Texas and Mexico.

††† Pod constricted to the middle, nearly equally above and below, mostly slender at the joints, these orbicular or oval. All southern or Mexican species.

‡ Trailing or reclining vines.

* Loment more or less prominently stalked in the calyx.

‖ Leaflets broad, joints 5-8, 2″ long, obliquely oval.

25. MEIBOMIA CINERASCENS (A. Gray).

Desmodium cinerascens, A. Gray, Pl. Wright. ii. 48 (1853).

Meibomia cinerascens, O. Kuntze, Rev. Gen. Plant. i, 197 (1891).

Distr.—Arizona and Mexico.

‖ Leaflets lanceolate or lanceolate-oblong, pubescent, loment 3-6 jointed, joints 1″ long, nearly orbicular.

26. MEIBOMIA BATOCAULIS (A. Gray).

Desmodium batocaulon, A. Gray, Pl. Wright. ii. 47 (1853).

Meibomia batocaulis, O. Kuntze, Rev. Gen. Plant. i. 197 (1890).

Distr.—Texas to Arizona and Mexico.

‖‖ Stem densely uncinate-pubescent, leaves rhombic-ovate, lighter beneath, loment 4-6 jointed, joints 1½″ long.

27. MEIBOMIA UNCINATA (Jacq.).

Hedysarum uncinatum, Jacq. Hort. Schœnbr. iii. t. 298 (1798).

Hedysarum Aparines, Link. Enum. ii. 247 (1822).

Desmodium Aparines, DC. Prodr. ii. 331 (1825), fide Hemsley Biol. Centr. Am. ii. 290.

Desmodium uncinatum, DC. Prodr. ii. 331 (1825).

Desmodium Sinclairi, Benth. Bot. Sulpher, 82 (1844), fide S. Watson Biblio. Index, i. 218 (1878).

Desmodium Sonoræ, A. Gray, Pl. Wright. ii. 47 (1853), fide S. Watson Biblio. Index, i. 218 (1878).

Meibomia uncinata, O. Kuntze, Rev. Gen. Plant. i. 197 (1891).

Meibomia Sonoræ, O. Kuntze, Rev. Gen. Plant. i. 198 (1891).

Distr.—New Mexico, Mexico and throughout South America.

‡‡ Herbs erect or ascending.

* Loment sessile in the calyx, or nearly so.

| Leaflets long, linear, 1-foliolate ; joints of the loment oval.

28. MEIBOMIA GRAMINEA (A. Gray).

Desmodium gramineum, A. Gray, Pl. Wright, ii. 46 (1853).

Meibomia graminea, O. Kuntze, Rev. Gen. Plant. i. 98 (1891).

Distr.—New Mexico and Mexico.

|| Leaflets linear, lower leaves 1-foliolate, oval or deltoid ; joints of the loment nearly orbicular.

29. MEIBOMIA NOVA-MEXICANA (A. Gray).

Desmodium Neo-Mexicanum, A. Gray, Pl. Wright. i. 53 (1852).

Desmodium exiguum, A. Gray, Pl. Wright. ii. 46 (1853).

Meibomia Neo-Mexicana, O. Kuntze, Rev. Gen. Plant. i. 198 (1891).

Distr.—Texas, New Mexico, Arizona and Mexico.

||| Leaflets linear to linear-lanceolate ; joints of the loment orbicular, twisted.

30. MEIBOMIA BIGELOVII (A. Gray).

Desmodium Bigelovii, A. Gray, Pl. Wright. ii. 47 (1853).

Desmodium Neo-Mexicana, var. *glabellum*, A. Gray, Pl. Wright. ii. 47 (1853).

Desmodium Neo-Mexicanum, var. *Bigelovii*, S. Watson, Biblio. Index Am. Bot. i. 217 (1878).

Meibomia Bigelowii, O. Kuntze, Rev. Gen. Plant. i. 197 (1891).

Distr.—New Mexico and Mexico.

|||| Leaflets ovate, 1-6′ long, loment much twisted, bracts and stipules conspicuous.

31. MEIBOMIA TORTUOSA (Sw.).

Hedysarum tortuosum, Swartz Fl. Ind. Occ. iii. 1272 (1806).

Desmodium tortuosum, DC. Prodr. ii. 332 (1825).

Meibomia tortuosa, O. Kuntze, Rev. Gen. Plant. i. 198 (1891).

Distr.—Florida and West Indies.

||||| Leaflets large, mostly 1-foliolate, loment much twisted.

31. MEIBOMIA ANNUA (A. Gray).

Desmodium annuum, A. Gray, Pl. Wright. ii. 46 (1853).

Meibomia annua, O. Kuntze, Rev. Gen. Plant. i. 197 (1891).

This species has been erroneously referred to *D. spirale*. There is a doubt as to the latter occurring in the United States.

The typical plant from the West Indies—a low-spreading herb, with small, ovate or ovate-rhombic leaves and very small twisted loment—may possibly occur as introduced in the Southern States.

Distr.—Texas, New Mexico and Mexico.

** Loment more or less distinctly stalked in the calyx.

‖ Joints of the loment nearly orbicular.

‡ Joints small, very slender at the joints, leaflets ½-1′ long.

33. MEIBOMIA WISLIZENII (Engelm.).

Desmodium Wislizenii, Engelm. in A. Gray, Pl. Wright. 1. 53 (1852).

Meibomia Wislizenii, O. Kuntze, Rev. Gen. Plant. i. 198 (1891).

Distr.—Arizona, Texas and Mexico.

‡‡ Joints large, leaflets narrowly linear, loment mostly 5-jointed, wide at the joints.

34. MEIBOMIA ARIZONICA (S. Watson).

Desmodium Arizonicum, S. Watson, Proc. Am. Acad. xx. 363 (1885).

Distr.—Arizona.

‖ Joints of the loment oval.

‡ Joints 2½″ long, leaves conspicuously yellowish green, lighter beneath.

35. MEIBOMIA GRAHAMI (A. Gray).

Desmodium Grahami, A. Gray, Pl. Wright. ii. 48 (1853).

Meibomia Grahami, O. Kuntze, Rev. Gen. Plant. i. 198 (1891).

Distr.—New Mexico, Arizona and Mexico.

‡‡ Joints 2″ long, leaves ovate, 1-foliolate.

36. MEIBOMIA WRIGHTII (A. Gray).

Desmodium Wrightii, A. Gray, Pl. Lindheimer. Bost. Journ. Nat. Hist. vi. 177 (1850).

Meibomia Wrightii, O. Kuntze, Rev. Gen. Plant. i. 198 (1891).

Distr.—Texas, New Mexico and Mexico.

‡‡‡ Mature joints about 4″ long, leaflets light green, scabrous.

37. MEIBOMIA PSILOCARPA (A. Gray).

Desmodium psilocarpum, A. Gray, Pl. Wright. i. 48 (1853).

Meibomia psilocarpa, O. Kuntze, Rev. Gen. Plant. i. 198 (1891).

Distr.—New Mexico and Mexico.

§ 2. Pod not constricted into separate joints, straight above, only slightly constricted below.

* Plant erect or accumbent, leaves dark-green, coriaceous, much reticulated.

38. MEIBOMIA INCANA (Swartz).

Hedysarum incanum, Sw. Fl. Ind. Occid. 1265 (1806).

Desmodium incanum, DC. Prodr. ii. 332 (1825).

Meibomia adscendens, var. *incana*, O. Kuntze, Rev. Gen. Plant. i. 195 (1891).

Distr.—Introduced into Florida.

** Plant low and spreading, loment ½′ or less long.

39 MEIBOMIA TRIFLORA (L.).

Hedysarum triflorum, Linn. Spec. Plant. 749 (1753).

Desmodium triflorum, DC. Prodr. ii. 334 (1825).

Meibomia triflora, O. Kuntze, Rev. Gen. Plant. i. 197 (1891).

Distr.—Introduced along the Florida coast.

The Fresh-water Algæ of Maine.—III.

(Plate CXXVI.)

BY F. L. HARVEY.

Since the second article upon the Algæ of Maine was written, we have occasionally examined gatherings in connection with laboratory work and below give the forms not before reported; also additional notes upon species before recorded. The most of the material came from Pushaw stream, near where it leaves the lake, and was attached to submerged sticks and stones. A rich gathering was also taken from a spring in a low meadow on the college farm. Accompanying this article is a plate illustrating some forms regarded as new, also other forms reported before as new and now figured. Other page and plate references are to Wolle's Fresh-water Algæ and Desmids of the U. S., the classification in those works being followed. We are again indebted to Mr. Wolle for suggestions and assistance. Unless otherwise credited the specimens were collected by the writer.

CLASS II.—CHLOROPHYCEÆ.

Family V.—Coleochætaceæ.

151. *Coleochæte soluta*, Pringsh., p. 64, Pl. LXXII.—Our specimens are similar to Fig. 3. in form, but sterile and only 11-15

μ d. With *Batrachospermum* in a ditch, above dam at Chemo stream. August 20, 1890.

Family VIII.—Confervaceæ.

152. *Chætophora pisiformis*, (Roth.) Ag., p. 116, Pl. CIII.—Associated with above and attached to *Batrachospermum*. Diameter of filaments in our own specimens 5-9 μ. Articulations 1-3 times as long as wide. Branchlets from 4-5 times as long as wide. Terminal cells more blunt than described by Wolle.

Family X.—Vaucheriaceæ.

153. *Vaucheria geminata*. (Vauch.) D.C., p. 151, Pl. CXXVIII.—Associated with the above. August, 20, 1890.

Family XII.—Volvocaceæ.

154. *Eudorina stagnale*, Wolle, p. 160, Pl. CLII.—Cœnobium 150 μ, containing only sixteen cells each 20 μ. Our specimen contained no green in the cytoplasm between the cells. Associated with diatoms, desmids and filamentous algæ in Pushaw stream.

155. *Gonium pectorale*, Mueller, p. 163, Pl. CLI.—Meadow spring on college farm, Orono, Me. Not abundant. October, 1891.

Family XIII.—Protococcaceæ.

156. *Scenedesmus dimorphus*, Kg., p. 173, Pl.CLVI.—Pushaw stream, October, 1890.

157. *Protococcus viridis*, var. *Wimmeri*, Wolle, p. 183, Pl. CLXI. Figs. 14-20.—Our specimens were dark green and measured 51 μ d. Pushaw stream among algæ. October, 1891.

Family XIV.—Palmellaceæ.

158. TETRASPORA MACROSPORA, n. sp.

Thallus membranaceous, with firm, gelatinous, transparent interior, small (about 1½ inches long), irregularly expanded and divided, verrucose, free, light green. Cells spherical or oblong, granular, geminate, quaternate or finally scattered, 5-16 μ d, 10-13 μ a common size.

Floating free in a spring on the college farm, Orono, Me. October, 1891. F. L. Harvey.

Fig. 1, geminate naked spore; fig. 2, quaternate spores attached; fig. 3, quaternate spores separated; figs. 4 and 5, large spores showing enclosed daughter cells, which are only sparingly found in the thallus; fig. 6, very large oblong spore, 20 by 30 μ, which showed motion; probably zoospore. The zoospores were sparingly scattered through the thallus, and the same color and of the same granular nature as the other spores. Our specimens harbored diatoms and infusoria but no filamentous algæ. The form of the thallus of this species is more like *T. expansa* (Kg.), Kirch, but the spores are larger and exceed those of all the species mentioned by Wolle, hence the name *T. macrospora*.

159. *Dimorphococcus cordatus*, Wolle, p. 199, Pl. CLX.—Among algæ, Pushaw stream. October, 1890.

160. APIOCYSTIS ELONGATA, n. sp.

Thallus obovate or narrowly pear-shaped, pale green, the cavity filled with gelatinous matter in which are imbedded the gonidia, at first about four and increasing with age. Length of thallus in the largest specimens 80 μ, and width 30 μ. The smaller forms were much more narrow in proportion to the length. Gonidia 7-11 μ. In the same gathering were free swimming zoospores about the size of the gonidia, and though we did not establish their relation to this species, presume they belonged to it.

We give several figures: Figs. 7 and 6, full grown thalli; figs. 8 and 10, younger forms observed; fig. 11, thallus budding. This seems to differ from *A. Brauniana*, Haeg., in the smaller more elongate form and larger gonidia. Spring pool, college farm. October 28, 1891. F. L. Harvey.

161. *Craterospermum lætevirens*, A. Br., p. 235, Pl. CL.

Mr. Wolle says on page 235 F. W. Algæ of the U. S., "that the only specimens recognized as possibly belonging to this genus were collected July, 1880, in Green Pond, N. J. The conjugation was complete, but the spores imperfectly developed, hence my hesitancy in calling it a pronounced species of this genus."

It will therefore be interesting to botanists to know that the writer has found this species in conjugation and with perfect zygospores in the Penobscot River at Orono, Me. The specimens were collected in a mill pond while the gates were open and the water very low. When the pond was full the plant must have been cov-

ered with two feet of water. We have made drawings of four fruiting filaments.. It will be noticed that the length of the neck between the filaments is quite variable.

In fig. 12 *a* and *b* the zygospores are spherical; in fig. 12 *c* barrel-shaped; in fig. 12 *d* the conjugation seems to have taken place between the end of one filament and the side of another. The conjugation does not always occur the same distance from the ends of the filaments. Our specimens were not so large as those shown by Wolle, the filaments being only 35 μ d. The zygospores were dark green and about 60 μ d. Some of the cells were fully twelve times as long as wide and others only four times as long. The plant mass was submerged and attached to sticks. Collected October 3, 1891. F. L. Harvey.

Family XVII.—Desmidieæ.

162. *Desmidium Baileyi* (Ralfs.) Wolle, p. 27, Pl. II. Our specimens not twisted. The excavations between the angles longer and narrower than in Wolle's figures, and the edges of the cells slightly concave. This may prove to be a new species. Pushaw stream, among algæ. October, 1890.

163. *Sphærozosma vertebratum* (Breb.) Ralfs., p. 30, Pl. IV.—Our specimens were from 15-20 μ wide and enveloped in a mucous sheath fully 60 μ wide. The cytoplasm was sometimes cruxiform in the cells. The filaments were apparently without twist. Attached to logs in the Penobscot River. October, 1890.

164. *Closterium subtile*, Breb., p. 158 (Appendix), Pl. VII. —Our specimens were sometimes 5 μ d. Swamp back of college woods, Orono, Me.

165. *C. attenuatum*, Ehrb., p. 41, Pl. VIII.—The ends in our specimens more attenuated than Wolle's figure. Frog pond, Orono, Me.

166. *C. moniliferum*, Ehrb., p. 45, Pl. VII.—Chloroplyllous granules large, fully one-third the diameter of the cell where they occur, and five in each half cell. Our specimens were about 47 x 306 μ. Spring, college meadow, Orono, Me. Oct., 1891.

167. *C. rostratum*, Ehrb., p. 46, Pl. VIII.—25 x 385 μ. Pushaw pond. Much longer than type. Probably new. Oct., 1890.

168. *C. Kuetzingii*, Breb., p. 47, Pl. VIII.—Specimens 17 x 460 μ. Pushaw stream. Oct., 1890.

169. *Docidium Baculum*, (Breb.), D. By., p. 49, Pl. XI.—Ends truncate, sides nearly parallel, vacuoles absent. The measurements 25 x 425 μ in our specimens. Spring in meadow, college farm. Oct , 1891.

170. *Cosmarium galeratum*, Nord., p. 70, Pl. XVI.—Spring, college meadow. Oct., 1891.

171. *Cosmarium protractum*, (Næg.), Archer., p. 83, Pl. XVII.—Meadow spring, college farm, Orono, Me. Oct., 1891.

172. *C. Beckei*, Wolle, —— Pl. L.—Our specimens only 1.5 μ d, and the cytoplasm collected in a ball. Meadow spring, college farm. Oct., 1891.

173. *Xanthidium armatum*, (Breb.) Ralfs, p. 92, Pl. XXI.—Spines shorter than figured by Wolle, but much like fig. 2 ; only 45-50 μ. Johny Mack Brook, Orono, Me. Oct. 1890.

174 *Euastrum Pokornyanum*, Grun., p. 104, Pl. XXVII.—Spring, college meadow, Orono, Me. Oct., 1891.

175. *E. pingue*, Elf., p. 105, Pl. XXVII.—With the above. Orono, Me. Oct., 1891.

176. *Micrasterias fimbriata*, Ralfs, forma, *nuda*, Wolle, p. 110, Pl. XXXVI., Fig. 4.—Our specimens 275 μ d. Pushaw stream, near the lake ; among algæ attached to submerged sticks. Oct., 1890.

177. *Staurastrum aviculum*, Breb., p. 123, Pl. XL., var. *brevispinum*, n. var., Pl. I., Fig. 13.—The type of this species was reported in Article I., No. 52, but since then we have found var. *brevispinum*, which differs from the type by being larger (35 μ d) ; the spines shorter and thicker, and the sides of the end view concave. None of the type form were found with this. Pushaw stream, among algæ. F. L. Harvey. Oct., 1890.

178. *S. polymorphum*, var. PENTAGONUM, n. var.

Broadly elliptical, sides tapering gradually into three processes tipped with spines ; end view pentagonal ; angles blunt and tipped with three spines ; diameter 48 μ. Sphagnum swamp, college farm. F. L. Harvey. 1890.

The more convex ends, larger size and pentogonal end view separate it from the type, with which we did not find it associated. See fig. 14, side view ; fig. 15., end view.

179. *S. nanum*, Wolle, p. 138, Pl. XLIV.—Our specimens granulose punctate. Pushaw stream. Oct., 1891.

180. *S. Sebaldi*, var. QUARTERNUM, n. var. Distinguished from the type by absence of spines; smaller size (5 μ), broader appearance and quadrangular end view. Fig. 16 side view; fig. 17 end view. Pushaw stream. Oct., 1890. F. L. Harvey.

181. *S. Eustephanum* (Ehrb.), Ralfs, p. 147, Pl. XLVIII.—The peculiar form shown at fig. 7 is doubtfully referred to the above species. It was 55 μ broad including the spines, and enclosed in a hyaline sheath with a dentate border which was over 75 μ d. The cytoplasm of the included form was dark green, and the half cells not symmetrical, the smaller half cell having only three processes. Only one specimen observed. Sketched for the writer by F. P. Briggs. Pushaw stream. Oct., 1890.

182. *S. arctiscon*, Ehrb., var. CRENULATUM, n. var.—Somewhat smaller than type, half cells more rounded, processes thicker and with crenulate margins (fig. 18). Pushaw stream. Oct., 1890. F. L. Harvey.

Family XVI.—Conjugatæ.

183. SPIROGYRA ÆQUALIS, n. sp.

Diameter of vegetative filaments quite constant, about 45 μ; 5-10 times longer than broad; spiral single (rarely two), making usually 5 to 10 turns, though 6, 7, 8 and 9 were occasionally observed; end inlaid, chlorophyl of the bands coarsely granular with about six large nuclei to each turn. Sporiferous cells not swollen; same width and length as the vegetative, and often curved; conjugation lateral, zygospores elliptical or spherical; 40 x 40 μ, 45 x 45 μ, 45 x 75 μ and 45 x 105 μ were the dimensions observed. The spores were as wide as the filaments, extending to the walls, which were not inflated; scalariform conjugation not observed; lateral conjugation quite abundant; plant in mass, grass green and slippery, spores somewhat darker green; double and single spirals were observed in contiguous cells of the same filament.

Abundant in pools in a swamp on the college campus. Oct., 1891. Collected by F. L. Harvey. (Figs. 19-21).

The replicate ends of the cells, the single spiral, and the smooth membrane of the spores, puts the plant into the *S. tenuissima* section of Wolle. The only plant mentioned at all related

to it is *S. Weberi*, Kg., with which it agrees in not having the fructiferous cells inflated, but from which it differs by the much greater diameter of the filaments, greater breadth in relation to the length of the cells, and the more compact spiral.

184. *S. longata* (Vauch.) Kg., p. 214, Pl. CXXXV.—Low ground pool. Orono, Me. Mr. Wilder Colby.

185. *S. dubia*, Kg., p. 220, Pl. CXXXV. Associated with the above. Mr. Wilder Colby.

Class III.—Cyanophyceæ.

Family XVIII.—Nostocaceæ.

186. *Nostoc rupestre*, Kg., p. 283, Pl. CXCVII.—Reported from Houlton, Me., but since observed at Bradley, Me. Associated with *Vaucheria geminata* in Chemo stream. Aug., 1890.

187. *Chamæsiphon incrustans*, Grun., p. 295, Pl. CC.—Our specimens young; only 5 x 8 μ, and rounded above; attached to filamentous algæ singly and in clusters. Rather abundant. Spring, college meadow. Oct., 1891.

188. *Oscillaria natans*, Kg., p. 314, Pl. CCVI.—Filaments solitary; among algæ attached to sticks. Pushaw stream. Oct., 1890.

189. *Oscillaria princeps*, Vauch., p. 317, Pl. CCVII.—Our specimens bluish green; cells 5 to 1 in diameter; end cell rounded; clear and twice as long as the others; filament straight and not narrowing toward the end; 30 μ d. Pushaw stream among algæ. Oct., 1890.

190. *Merismopedia convoluta*, Breb., p. 326, Pl. CCX.—Our specimens bluish green; colonies 31 μ, attached to spruce logs floating in the Penobscot. Orono, Me. Oct., 1890.

EXPLANATION OF PLATE CXXVI.

Fig. 1. *Tetraspora macrospora*, geminate spore.
Figs. 2 and 3. *Tetraspora macrospora*, quaternate spores.
Figs. 4 and 5. *Tetraspora macrospora*, large spores with daughter cells.
Fig. 6. *Tetraspora macrospora*, large motile zoospore.
Figs. 7–9. *Apocystis elongata*, full grown Thalli.
Figs. 8–10. *Apocystis elongata*, younger forms observed.
Fig. 12. *Craterospermum lætevirens; a* and *b*, spherical zygospores; *c*, barrel-shaped zygospores; *d*, abnormal conjugation.

Fig. 13. *Staurastrum aviculum*, var. *brevispinum*, side view.
Figs. 14 and 15. *Staurastrum polymorphum*, var. *pentoganum*.
Figs. 16 and 17. *Staurastrum Sebaldi*, var. *quarternum*.
Fig. 18. *Staurastrum arctiscon*, var. *crenulatum*.
Fig. 19. *Spirogyra æqualis*, sterile filament.
Figs. 20 and 21. *Spirogyra æqualis*, fertile filaments.
Fig. 22. *Staurastrum eustephanum*, young encysted.
Fig. 23. *Xanthidium cristatum*, var. *truncatum*, Harvey. No. 122, Art. II., Me. Algæ, BULLETIN, Vol. XVI., p. 186.
Figs. 24 and 25. *Euastrum verrucosum*, var. *simplex*, Joshua. No. 46, Art. I., Me. Algæ, BULLETIN, June, 1888, p. 160.
Figs. 26 and 27. *Staurastrum saxonicum*, var. *pentagonum*, Harvey. No. 62, Art. I., Me. Algæ, BULLETIN, June, 1888, p. 161.

Sereno Watson.

BY WALTER DEANE.

Systematic botany has sustained a most serious loss in the recent death of Dr. Sereno Watson, Curator of the Harvard College Herbarium. It is always with a feeling of deep sorrow that we record the death of a man who has made himself famous by his eminence in science, but far deeper is our loss when, to his scientific attainments is added the kindly spirit which prompts the scholar to aid and encourage those seeking his assistance. Such was Dr. Watson. Reserved and retiring by nature, he rather shrank from society, and preferred to devote himself almost entirely to his own labors. But it was in the herbarium especially that his gentle nature and his readiness to help those about him were shown. He was never too busy to stop and ask a friendly question or give a courteous answer. How many times has he paused in his own work to help unravel some knotty problem put before him! But, to the botanical world at large, he will always be known as a master of systematic botany.

Dr. Watson was born at East Windsor Hill, Connecticut, December 1st, 1826. After graduating at Yale College in 1847, he taught school for six years in New England, Pennsylvania and New York, besides holding the position of tutor in Iowa University. A portion of this time he spent at East Windsor and at the University of New York in studying medicine. He continued his studies from 1853 to 1855, with his brother at Quincy, Illinois, where he practiced medicine for two years after. Though possessing a general interest in botany all this time, he

did not, until 1867, give himself up entirely to its pursuit. He spent five years, from January, 1856, to April, 1861, at Greensboro, Alabama, as Secretary of the Planters' Insurance Company, and for some years after this he assisted Dr. Henry Barnard, of Hartford, Connecticut, in his literary work.

His botanical career may be said to have begun when he joined the Clarence King Expedition as a volunteer botanist, in July, 1867. This expedition had for its object the geological exploration of the 40th parallel in the Western United States, and Prof. W. W. Bailey was botanist in charge. In March, 1868, Prof. Bailey was obliged to resign his position, and Dr. Watson became botanist to the expedition. The elaboration of the collections made was done mainly at Prof. D. C. Eaton's Herbarium at Yale College, New Haven, Connecticut, but he visited, also, the Gray Herbarium at Cambridge to complete his study of some of the types of our western plants. Vol V. of the U. S. Geological Exploration of the 40th Parallel contains the results of this work. It is a splendid example of critical acumen.

His connection with the Gray Herbarium began in 1870, and continued till his death. He had charge of the immense collections there deposited, as well as of the library, and here it was that Dr. Watson's literary botanical work was mainly done. Eighteen Contributions to American Botany appeared from his pen between the years 1873 and 1891. Most of them were published in the Proceedings of the American Academy of Arts and Sciences. The value of these contributions cannot be overestimated. They contain, besides many other valuable articles, monographs on the Roses of North America, the North American Liliaceæ and Chenopodiaceæ, and on many of our important genera, as Lupinus, Oenothera and Eriogonum. Hundreds of new species are described in these papers. Dr. Watson's habit of careful observation, in whatever branch of study he had been pursuing, especially fitted him for this kind of work, and the value of his descriptions is abundantly attested by all botanists.

In 1878 was published the Biographical Index to North American Botany, Part I., Polypetalæ, a work of great value, which it is much to be regretted that he could not complete. The first volume of the Botany of California, by Dr. Watson, Dr. Asa Gray

and Prof. W. H. Brewer, appeared in 1876, followed in 1880 by Vol. II., published by Dr. Watson. The two volumes contain nearly twelve hundred pages, and are a monument to the authors. Dr. Watson assisted in writing the botanical portion of the Century Dictionary in the earlier numbers of the work. He contributed also to many scientific journals, the BULLETIN containing many of his papers. He was a warm friend of the late Leo Lesquereux, bryologist, and, on the death of Mr. Thomas P. James, with whom Lesquereux was publishing a Manual of the Mosses of North America, Dr. Watson undertook to complete the publication of the work, owing to Lesquereux's failing health, and he issued the volume in 1884. In 1889, he published, in connection with Prof. J. M. Coulter, the Sixth Edition of the Gray Manual of the Botany of the Northern United States. This work was eagerly looked forward to, and joyfully welcomed by all students of the flora of the Northeastern United States, for the last edition had been published as far back as 1867. The western range of the old Manual is extended in this edition to the one hundredth meridian, in order to connect it with the Manual of the Rocky Mountain Region, by Prof. Coulter. A second issue of this work has already appeared.

Dr. Watson was a member of many scientific societies at home and abroad, and from Iowa University he received the degree of Ph.D. His career in Cambridge was marked by the most indefatigable work. His connection with the Herbarium involved many duties relating to the care of the plants under his charge, and of the library, and it is a wonder that he was able to accomplish so much original work. He rarely took even a short vacation, and it was seldom that he was not to be found surrounded by his books and herbarium sheets in the familiar room, sanctified for so many years by the presence of Dr. Asa Gray. To Dr. Watson most befittingly it fell to carry on the Synoptical Flora of North America, which it is the earnest wish of every botanist to see carefully completed. He had worked harmoniously so long with Dr. Gray, that he thoroughly understood the plan on which the great Flora was to be continued. Unfortunately he did not live to do much in this direction.

During the last two years of his life, he used Dr. Gray's study,

instead of the Herbarium, for his special work, and, in the retirement of that room, filled with so many pleasant memories, he passed quiet and happy hours in his last labors. His peaceful life in Cambridge was broken by but few extended tours. He made a trip to the Northwest in connection with the Forest Department of the Census of 1880, and in 1885 he went on a collecting trip to Guatemala. He brought back a valuable collection of plants, among them twenty-five species of palms, and he published the results of his examination of a part of them in the Proceedings of the American Academy of Arts and Sciences. Unfortunately, however, he contracted malarial fever in the damp region of that tropical country, and he was never after entirely free from its effects. In 1886, in company with Dr. Geo. L. Goodale, he travelled for three months in Europe and was much benefited by the change.

About the middle of December last, Dr. Watson was taken sick with the prevailing influenza, which resulted in dilatation of the heart. For some weeks his recovery, though uncertain, was hoped for, and he himself often talked, with the greatest longing, of returning to work. But he grew weaker and weaker, till finally, on the morning of March 9th, 1892, he peacefully passed away. It was a beautiful ending to a well-spent life. The funeral services were held at Appleton Chapel, Cambridge, on March 11th, and were conducted by Rev. F. H. Smith and Rev. Dr. Alexander McKenzie in a very simple but impressive manner. The singing was by the college choir.

The pallbearers were Profs. Wm. H. Brewer, Chas. S. Sargent, Henry G. Jesup, Geo. L. Goodale and Wm. G. Farlow, Mr. W. F. Ganong, Dr. Roland Thaxter and Dr. B. L. Robinson. At Dr. Watson's own request his remains were laid in the College lot, at Mt. Auburn Cemetery, Cambridge.

He has left to the world a rich legacy in his works, and, to many of us, bright memories of a warm and loving friend.

Some Additions to Our Eastern Flora.

By Thos. C. Porter.

EUPATORIUM VASEYI, n. sp. Stem slender, 2 to 3 ft. high, glabrous below, corymbosely branching above, the branches and inflorescence minutely puberulent; leaves lanceolate, narrowed

toward the base, sessile, serrate with acute or acutish serratures, pinnately veined, less than 3 inches long, glabrous; heads five-flowered, larger than in the allied species; involucral bracts broader and more closely imbricated, obtuse, or some of the inner ones with a setaceous tip. Intermediate between *E. rotundifolium* and *E. sessilifolium*.

Lookout Mountain, Tenn. G. R. Vasey. 1878.

EUPATORIUM SESSILIFOLIUM, L., var. BRITTONIANUM, n. var. Stems and branches slender; leaves ovate, sessile, acute or somewhat acuminate, 1½ inches long or less, serrulate, glabrous, pinnately veined; corymbed panicles contracted, about three inches broad.

Budd's Lake, Morris Co., N. J. Sept., 1876.

This striking variety is named in honor of the author of the Catalogue of the Plants of New Jersey.

SOLIDAGO PUBERULA, Nutt., var. MONTICOLA, n. var. Stem erect, 3 to 12 inches high, usually deep purplish brown, minutely puberulent; leaves dark green; panicle a contracted thyrsus, 2 to 4 inches long; heads of flowers larger; involucral bracts lanceolate-subulate; rays conspicuous, bright yellow, even when dried; akenes pubescent.

Mt. Kineo, Maine, 1871; Dog Mountain (Mt. Desert Island), Maine, Rand; Mount Monadnock, N. H., Deane.

The dwarf forms on the tops of the highest mountains can scarcelybe distinguished from *S. Virgaurea*, L., var. *alpina*, Bigelow. At lower elevations in the same region another form of *S. puberula* occurs, which connects this variety with the type. It is taller, 3 feet high. The stems and foliage are paler, the puberulence on the stems scanty, the panicles larger, looser, branching, and the akenes pubescent with a few scattered hairs. It was collected by Mr. Edwin Faxon at Shelburne, N. H., and by Mr. Redfield on Mt. Desert Island, and may deserve varietal distinction.

SOLIDAGO HUMILIS, Pursh., var. MICROCEPHALA, n. var. Heads of flowers numerous and very small for the species, scarcely a line and a half long.

Frenchman's Camp Road, Mt. Desert, Maine, Redfield, Aug., 1891.

SOLIDAGO BOOTTII, Hook., var. YADKINENSIS, n. var. Stem

erect, rather slender, 2 to 4 ft. high, more or less angled, scabrous-pubescent above; leaves lanceolate, sessile, acuminate, sparingly serrate; branches of the panicle elongated and ascending, terminated by short, secund racemes made up of a few scattered heads, either solitary or in small clusters, on short peduncles; heads four lines long or more; outer involucral bracts closely imbricated, obtuse, their tips green, the inner ones linear-oblong, pale yellow; rays conspicuous, 5 to 7; disk florets, 14 to 16; akenes puberulent.

Collected on the Yadkin river, North Carolina, by Messrs. Small & Heller, Aug. 18, 1891. No. 373. A single specimen, obtained by the Rev. M. A. Curtis years ago in the same region, exists in the Torrey Herbarium, under which Dr. Gray has written, "A great form!"

SOLIDAGO SPECIOSA, Nutt., var. PALLIDA, n. var. Stout, erect, 1 to 2 ft. high; leaves ovate, thick and coriaceous, with prominent veins, pale or whitish; heads as large as those of the type.

Bergen Park, Colorado, Aug., 1877, Greene; Mt. Mackay, Canada, Sept., 1889, Britton.

SOLIDAGO ROANENSIS, n. sp. Stems 2 to 2½ feet high, reddish, smooth below, puberulent above; leaves thin, glabrous; lower ones elliptical, sharply serrate, tapering into margined petioles; upper ones lanceolate, acute or acuminate; panicles virgate and thyrsoid, from 4 to 8 inches long; heads 4 lines high, peduncled, not closely crowded; inner bracts of the involucre linear, acuminate; outer ones shorter, somewhat obtuse; rays short, scarcely equalling the disk; akenes oblong, terete, glabrous.

Roan mountain, North Carolina, A. A. Heller, Aug. 13th, 1890. No. 88.

In general aspect and some of its characters it resembles *S. puberula*, but the foliage is quite different and the involucral bracts much narrower. The heads of flowers are those of *S. spithamæa*, but the akenes are perfectly smooth, and the inflorescence an elongated thyrse. It seems to be intermediate between the two species.

TRIPSACUM FLORIDANUM, n. sp. Culm erect, 3 feet high, rather stout, leafy; leaves 1 to 2 feet long, crowded at the base, 1 to 3 lines wide, from flattened, whitish, coriaceous sheaths and

tapering into a long, involute, setaceous point; spike single, 8 inches long, drooping above; sterile flowers much exceeding the short joints of the rhachis; outer glumes oblong-ovate, narrowed to a blunt or acutish tip; pistillate joints 4 lines long.

Collected by the late Dr. A. P. Garber at Miami, Southeastern Florida, June, 1887.

Botanical Note.

Weeds at the World's Columbian Exposition. In order that the exhibition of weeds at the World's Columbian Exposition may be large, and representative of all sections of the country, the undersigned (having this feature in charge) respectfully ask for specimens of the worst weeds from all States and Territories.

It is suggested that each botanist or local collector, who may be pleased to assist in the work, secure at least three specimens each of the worst weeds in his State or section. In making the specimens it is important that the following points be considered: [1.] Seeds are especially desired. [2.] Seedlings are important in various stages of development. [3.] The root system is essential: also [4] the flower and flower cluster, and [5] the seed vessel.

It may be necessary, therefore, to secure these various essentials at different times during the coming season. If the weed is a large one stress is laid upon the procuring of specimens while they are small enough so that the whole plant, roots and all, can be mounted, without bending, upon an herbarian sheet of ordinary size, that is, not over a foot in length. They are not to be mounted, however, by the collector.

That unnecessary duplication may be avoided, persons who contemplate collecting specimens should signify their intentions to the undersigned, and allotments will then be made, the assignments depending largely upon the locality. It is hoped that each State in the Union may be represented by specimens in this national exhibit of our worst weeds.

The collecting must all be done the present season, and the specimens sent in for mounting, labeling, etc., by December 1st.

Correspondence is solicited. BYRON D. HALSTED.

Rutgers College, New Brunswick, N. J.

Reviews of Foreign Literature.

Dictionaire de Botanique. H. Baillon. (4to, 4 volumes, Paris, 1876-1892).

This most valuable work of Prof. Baillon is just completed by the appearance of the thirty-fourth fascicle. It is the greatest storehouse of botanical information extant, and the world owes its learned author a high sense of gratitude for the years of labor and research expended on it. In these four grand volumes may be found an answer to almost any question that arises in the whole broad field of botanical science; nearly every generic name ever used in either phanerogams or cryptogams is here alluded to and referred to its original place of publication; common names in all languages are given and usually extended accounts of taxonomical or descriptive terms. The work is freely illustrated. Without these books any scientific library is incomplete. N. L. B.

Halbflechten. In Flora 1891, pp. 92-107, is an article by H. Zukal on "Halbflechten" or half-lichens. The author applies this name to three distinct classes of plants. First to certain plants having the appearance of lichens, but which are found on examination to lack the algæ, therefore really they are saprophytic fungi. Another class are said to find the suitable algæ only occasionally, and when this is the case, they unite with them, forming a regular hypha-thallus. Still a third class in which the fungus hyphæ are always found combined with algæ, but in such a manner as to resemble any ordinary fungus parasite, rather than hose known as lichen-forming parasites.

He describes three new species which may be classed as half lichens, and another which cannot be classed among these. This last is a parasite on certain *Scytonema* species and has one very interesting feature. It produces algæ galls, as the author calls them, which are inhabited by the vegetative part of the mycelium, while the fruit hyphæ penetrate the cells of the algæ and finally kill it. E. L. G.

Diatomées espèces nouvelles marines, fossiles ou pélagiques. Prof. J. Brun. (Reprint from Memoires de la Société de physique et d'histoire naturelle de Genève, Tome xxxi., Seconde partie, No. 1; 12 plates and 47 pages of text).

In this volume Prof. Brun figures and describes eighty-eight new species and twenty-five new varieties of diatoms. He also constitutes three new genera, viz: *Cotyledon, Radiopalma* and *Hydrosilicon.* These are all difficult forms to place and doubtless will give rise to some discussion. The plates are of unusual excellence, being phototypes from photo-micrographs, made by Dr. H. Van Heurck and M. Otto Muller by the aid of the new apochromatic lenses of Zeiss. C. H. K.

Index to Recent Literature Relating to American Botany.

Atriplex corrugata. S. Watson. (Bot. Gaz. xvi. 345).
A new species from Colorado.

A New Herbarium Pest. C. V. Riley. (Bot. Gaz. xvi. 334, illustrated).

Botanical Excursion to "The Chats"—A. (Ottawa Nat. v. 197).

Botanical Section—Report of. James Fletcher and others. (Ottawa Nat. v. 200).

Botanical Section of the Phila. Acad. Sci.—Report of. J. H. Redfield. (Proc. Acad. Nat. Sci. Phila. 500, 1891).

Botanical Section—Report of. Proc. Rochest. Acad. Sci. i. 120).
Lithospermum hirtum and *Veronica Buxbaumii* are among other interesting plants reported from the vicinity of Rochester. Attention is called to the curious differentiation in the size and division of the leaves of *Taraxacum officinale,* variations not noted in the botanies.

Cæsalpinia paucijuga. (Hook. Icones Plant. x. pl. 1977).

Canna flaccida. (Meehan's Month. ii. 36).

Catostemma fragrans. (Hook. Icon. Plant. x. pl. 1986).

Clematis paniculata. (Gard. & For. v. 90).

Cynoches glanduliferum. R. A. Rolfe. (Gard. Chron. xi. 204).

Das Nicht vorkommen der Wurzel von Polygala alba mit der Senega des Handels. J W. Lloyd. (Pharm. Rundsch. x. 51).

Desmid—A Proposed New. Wm. N. Hastings. (Am. Micros. Journ. xiii. 29).
Description and figure of *Gonatozygon aculeatum.*

Elms of the St. Lawrence Valley—The. T. H. Hoskins. (Gard. & For. v. 86).

Etude sur la Classification Naturelle et la Morphologie des Lichens du Brésil. Edouard A. Wainio. (Acta Soc. Fauna et Flora Fennica, vii. Helsingfors, 1890).

The entire volume of 256 pages of the acts of this Finland society is devoted to the description and classification of Brazilian lichens.

Ferns—Synoptical List. Bull. Bot. Depart. Jamaica, Nos. 22, 23, 25, 26.

Filices Mexicanæ. I., II. (Gard. & For. iv. 448–450, f. 71; 483, 484, f. 75).

An enumeration of the ferns collected by C. G. Pringle in Mexico. *Asplenium Pringlei* and *Hemionitis elegans* are figured, and *Asplenium dubiosum* is described as new.

Flora of Northern Yucatan—Observations on. Angelo Heilprin. (Proc. Amer. Philos. Soc. xxix. 137-144).

Florida Pines. (Gard. & For. v. 73; illustrated).

Flora Ottawaensis.—Additions Made Since Last Report. (Ottawa Nat. v. 204).

Forest Trees of Oregon—The. II., III. Thos. Condon. (West Am. Sci. vii. 115–117; 142-143).

Species under the genera *Picea, Thuya, Libocedrus, Chamæcyparis, Juniperus, Taxus, Quercus, Acer, Fraxinus, Alnus, Oreodaphne, Arbutus, Cornus, Populus* and *Prunus.*

Forest Vegetation of the Upper Mississippi. I., II. L. H. Pammel. (Gard. & For. iv. 460, 461; 472).

Fungus Diseases of Iowa Forage Plants. L. H. Pammel. (Extracts of a paper read before the Iowa Acad. Sci., reprint, no date).

Fungus Diseases of the Sugar Beet. L. H. Pammel. (Bull. No. 15, Iowa Agric. Ex. Station; illustrated).

Fungi Guaranitici. C. Spegazzini. (Rev. Argent. Hist. Nat. i. 398-432).

This is the concluding part of the descriptive list of Argentine Fungi, published by Senor Spegazzini. A very large number of new species are proposed.

Fungi—North American. A. P. Morgan. (Journ. Am. Soc. Nat. Hist. xiv. 141, contin. from xiii. 21).

Interesting Items on Diatoms. Chas. F. Cox. (Am. Micros. Journ. xiii. 32).

Jeffersonia diphylla, and Its Occurrence near Rochester—On. (Ch. S. Dodge. (Proc. Rochest. Acad. Sci. i. 175).

Leguminosæ novæ v. minus cognitæ Austro-Americanæ. P. Taubert. (Flora lxxv. 68; illustrated).

New species are described in the following genera: *Inga, Calliandra, Mimosa, Piptadenia, Cynometra, Bauhinia, Cassia, Sclerolobium, Tounatea, Sweetia, Lonchocarpus, Platymiscium.* A new genus, *Goniorrhachis*, with one species, *G. marginata*, based on Glaziou's No. 13,726, is also described and figured.

List of the Indigenous Ferns of the Vicinity of Rochester, with Notes—A. Ch. W. Seelye. (Proc. Rochest. Acad. Sci. i. 186).

Making an Herbarium, or Preserving Plants. W. J. Beal. (Science, xix. 123).

Mariposa Lilies. Ernest H. Krelage. (The Garden xli. 144; illustrated).

Notes and descriptions of seventeen species of the genus *Calochortus* cultivated at Haarlem, Holland.

Mosses of Lancaster County, Pennsylvania—Preliminary List of. J. K. Small. Pamphlet, 8 pp., published by the author. Feb., 1892.

This list of one hundred and fifty species has been compiled from the collections of Prof. Porter, with a few recent additions, the object being to "incite collectors to gather specimens in the less explored parts of the country." It is a valuable contribution to the subject of the distribution of our eastern mosses. Names of collectors and localities are given. E. G. B.

New Plants Collected by W. G. Wright in Western Mexico. B. L. Robinson. (Bot. Gaz. xvi. 340).

Ayenia Wrightii, Mimosa affinis, Buddleia Wrightii and *Citharexylum Cinoloanum* from the Mazatlan river are described as new.

Notes on the Fungus Causing Damping Off and Other Allied Forms. T. W. Galloway. (Trans. Mass. Hort. Soc. Part i. 1891).

Pythium De Baryanum and *Saprolegnia monoica*, illustrated.

Notes on Nomenclature. Geo. B. Sudworth. (Gard. & For. v. 98).

The identity of *Quercus Kelloggii*, Newberry (1857), is es-

tablished with *Q. tinctoria*, var. *Californica*, Cooper (1756), which should now stand as *Q. Californica* (Cooper). The oldest specific name for *Quercus tinctoria*, Bartram (1791), is *Q. velutina*, Lamarck, published two years previous, in 1789. There are, in fact, two names older than Bartram's, as Aiton in Hortus Kewensis (1789) published the name *Q. discolor* for the Quercitron.

In Garden & Forest ii., 471, Professor Sargent gives *Quercus cuneata*, Wangenheim (1787), as the earliest reliable specific name for Michaux's *Quercus falcata*, passing over Marshall's (1785) two names, *Q. rubra digitata* and *Q. rubra montana*, on account of the general vagueness of the descriptions. Mr. Sudworth points out the advisability of inquiring if there is not sufficient reason for adopting Marshall's *Quercus nigra digitata* (1785), the identity of which with the Spanish oak he does not seem to doubt; in which case *Quercus digitata* would stand instead of *Q. cuneata*, Wangenheim, or *Q. falcata*, Michx.

Notes on North American Trees. XVI., XVII., XVIII., XIX. C. S. Sargent. (Gard. and For. iv. 340, 435, 448, 472).

Rhus venenata and *R. cotinoides* are critically discussed, as well as *Cercis reniformis*, *Robinia viscosa* and *Piscidia Piscipula*.

Notes upon Peronosporeæ for 1891. Byron D. Halsted. (Bot. Gaz. xvi. 338).

On the Seed-Coats of the genus Euphorbia. L. H. Pammel. (Trans. St. Louis Acad. Sci. v. 543, illustrated reprint).

Peculiar Forms of Proliferation in Timothy. J. W. Toumey. (Bot. Gaz. xvi. 346, with plate).

Notes on this subject may be found in Master's Vegetable Teratology, pp. 115, 138 and in BULLETIN, vii. 118, 119; xi. 120.

Pinus latifolia. T. S. Brandegee. (Gard. and For. v. 111).

Notes on this rare tree from the Santa Rita Mts., Arizona.

Possibilities of our Native Grapes. T. V. Munson. (Am. Gard. xii. 580-586).

Prunus hortulana. L. H. Bailey. (Gard. and For. v. 90).

Pucciniosira, Chrysopsora, Alveolaria, und Trichopsora, Vier neue Uredineen Gattungen mit tremelloider Entwickelung. G. de Lagerheim. (Ber. Deut. Bot. Gesel. ix. 344).

The description of four new genera and six species from Ecuador.

Reiscultur, insbesonder in Brasilien—Die. Walter May. (Bot. Zeit. l. 56).

Relationships of the Archegoniata—On the. Douglas Houghton Campbell. (Bot. Gaz. xvi. 323).

Root Foods of the Seneca Indians. G. H. Harris. (Proc. Roches. Acad. Sci. i. 106).

Schinusarten Brasiliens—Die Officinellen. Theo. Peckolt. (Pharm. Rundsch. ix. 86-89, continued).

Smuts of Oats and Wheat—Treatment of. (U. S. Depart Agric. Farmers Bull. No. v. illustrated).

Solandra grandiflora. (Gard. and For. v. 92).

Some Cercosporæ from Alabama. Geo. F. Atkinson. (Journ. Elisha Mitchell Sci. Soc. viii. part ii-i).

Southern Tomato Blight—The. Byron D. Halsted. (Miss. Agric. Ex. Sta. Bull. xix).

Spring in West Virginia. Danske Dandridge. (Gard. and For. v. 100).

Spruces and Firs on the Maine Coast. (Gard. and For. v. 97, illustrated).

Sulla presenza di Sferiti nell Agave Mexicana. Louigi Re. (Ann. R. Inst. Bot. Roma. v. 38).

Swans-neck Orchids—The. R. A. Rolfe. (Gard. and For. v. 88). Notes and descriptions of fifteen species of the curious genus *Cynoches* from Central and South America.

Symbolæ ad Floram Brasiliæ Centralis cognoscendam. Eug. Warming. (Vidensk. Medd. Naturh. For. Kjob. 1890, 24-53; 158-165, 182-205, Tab. II-VII).

Parts 34, 35 and 36 of these studies of the Brazil flora, edited by M. Warming are contained in this volume. Part 36, devoted to the Desmidieæ, is contributed by F. Borgesen, and numerous new species are described in the genera *Closterium, Micrasterias, Euastrum, Cosmarium* and *Staurastrum.* Part 35 contains the Nyctagineæ, with new species of *Pisonia* described by A. Heimarl. Part 36 contains notes on Compositæ.

Tan Bark Oak—The. Carl Purdy. (Gard. and For. v. 118).

Quercus densiflora, one of the most beautiful of the Californian oaks, ranges from Monterey County north to Mount Shasta in the Coast Range, where it attains its greatest size and perfection in the

Redwood belt and is there now rapidly becoming the prey of the bark peelers. The commercial value of its bark is so great that large quantities are being hauled over rough mountain trails to the railroads or seacoast. The bark only is used and great masses of the wood are left to rot or become fuel for forest fires, and unless the onslaught is checked, the large and valuable growth of this fine oak will be entirely destroyed.

Tradescantia pilosa. (Meehan's Month. ii. 36).

Illustrated under the name of *T. rosea.*

Treatment of Smuts of Oats and Wheat. W. T. Swingle. (U. S. Depart. Agric. Farmers' Bull. No. v).

Trichomanes radicans. (Meehan's Month. ii. 33, illustrated).

Trinidad Royal Botanic Gardens—Annual Report on the. (Gov. Print. Est. Port of Spain, 1891).

This is an imposing document, minutely setting forth the work accomplished in every direction in this flourishing West Indian garden. Illustrations are given of *Couroupita Guianensis, Latania glaucophylla* and *Licuala* sp., and also elaborate diagrams of the organs by which *Coryanthes macrantha* is fertilized by a bee.

Touroulia Jenmani. (Hook. Icon. Plant. x. pl. 1998).

Weeds of California—The. E. W. Hilgard. (Gard. and For. 316, 328, 375, 424, 458, 604).

A large number of our Eastern pests are noted, such as *Brassica* sp., *Rumex* sp., *Chenopodium* sp., etc. *Portulaca oleracea* does not seem to be spreading, although it has appeared in a few localities. *Calandrinia Menziesii* is a native that is classed as a "weed" as is also *Eschscholtzia Californica, Oxalis corniculata* and *Erodium cicutarium.*

Among the Leguminosæ are mentioned *Medicago denticulata, Melilotus Indica, Lupinus formosus, Glycirrhiza lepidota.* The Umbelliferæ are said to include hardly a single plant that can be classed as an obnoxious weed. Among the Compositæ are noted *Centaurea Melitensis, C. solstitialis, Anthemis Cotula, Silbyum Marianum, Xanthium Canadense, X. spinosum, Senecio vulgaris, Sonchus oleraceus* and *Erigeron Canadense.*

Winter Rambles in the Pine Barrens. II., III. E. J. Hill. (Gard. and For. v. 74-110).

Ueber einige Licania Arten. Karl Fritsch. (Oestr. Bot. Zeitschrift, 1891, No. 1, reprint).

Owing to the name of *Licania pallida* having been published by Sagot in 1883 for another plant, the species No. 2442 of Dr. Rusby's collection from Bolivia described under that name in 1890 is now named by Dr. Fritsch *Licania Brittoniana.*

Zur Biologie der Iochroma macrocalyx, Benth. G. de Lagerheim. (Ber. Deut. Bot. Gesel. ix. 348, illustrated).

Proceedings of the Club.

WEDNESDAY EVENING, FEBRUARY 24TH, 1892.

Vice-President Mr. Thos. Hogg in the chair and twenty-five persons present.

Dr. Britton exhibited a specimen of *Sisymbrium Hartwegianum*, Fourn., collected by Mr. E. P. Sheldon of the University of Minnesota at Lake Benton, Minn.; this greatly extends the range of the species to the northeast.

Dr. Morong read the announced paper of the evening on "The Pronunciation of Botanical Names."

TUESDAY EVENING, MARCH 8TH, 1892.

Vice-President Mr. Thos. Hogg in the chair, and fourteen persons present.

The Editor was authorized to present a copy of the Preliminary Catalogue of Anthophyta and Pteridophyta reported as growing within one hundred miles of New York, 1888, to the Philadelphia Botanical Club, and the Committees on the Local Flora were empowered to confer with that organization relative to co-operation in the study of the flora of the vicinity of New York and Philadelphia.

The Literary Committee was increased from three members to four and constituted with Dr. Morong as Chairman, Miss Caskin, Miss Stabler and Dr. Wheelock as associates.

Miss Eloise P. Luquer, of Bedford, New York, and Professor Elwyn Waller, of Columbia College, were elected active members.

Mr. Henry Kraemer, Chairman of the Field Committee of 1891, read a report on the field excursions of last season. The report was accepted and the thanks of the club tendered to Mr. Kraemer for his efficient administration of the work of the com-

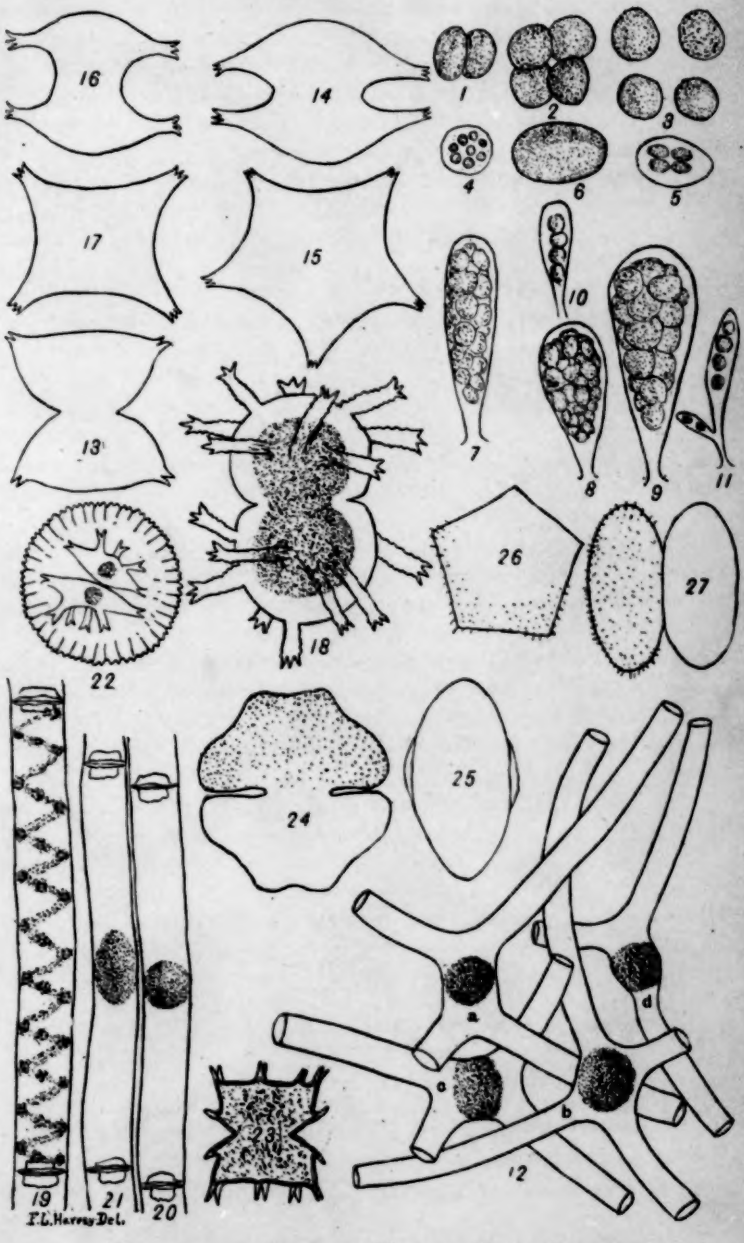
mittee. The report was referred to the Committees on the Local Flora.

Twenty-four field meetings in all were held, with an average attendance of twelve persons. At Woodhaven, Long Island, a new locality for *Menyanthes trifoliata* was detected; one of the plants observed bore two leaflets instead of three. At White Plains, Westchester Co., *Claytonia Caroliniana*, rare in the region, was collected. High Point, Sussex Co., N. J., was visited on Decoration Day, especially for the investigation of a *Vaccinium* with black fruit, found there in July of the previous year; this was found, but its flowers were nearly all past. It appears to be *V. Canadense*, var. *nigrum*, Wood, and may prove to be a distinct species. (See BULLETIN xviii. 136). The following plants of especial interest were collected: *Rhododendron canescens*, in full flower; a *Cratægus*, growing with the ordinary form of *C. coccinea*, but blooming much later, with numerous densely glandular bracts to the flowers and leaves narrowed, not truncate at the base, marking it as a distinct species, probably the *Mespilus glandulosa* of Mœnch; *Aquilegia vulgaris*, escaped along roadsides; *Equisetum sylvaticum*, and along a roadside near Port Jervis, N. Y., *Tussilago Farfara*.

On June 6th, by invitation of Mr. Jas. R. Pitcher, about sixty persons, including a part of the summer class in botany, visited the American Nurseries at Short Hills, N. J., and a most delightful day was experienced. In addition to the wealth of floral display of the great green-houses, nearly one thousand species of hardy perennials were seen growing in the open air. Messrs. Pitcher and Manda were most attentive in pointing out plants of especial interest, many of which were quite novel to many of the visitors.

Sandy Hook, N. J., was visited on July 25th, and its plants carefully listed. *Martynia proboscidea*, which has been established there for many years, was found to be scarcer than formerly. *Asplenium platyneuron*, which generally grows in rocky places, occurs here in pure sand and the introduced *Lactuca Scariola* was noticed. At Forbell's Landing, Long Island, Sept. 19th, *Cleome spinosa* was found in the woods; *Aster concolor*, *A. spectabilis*, *Diodia teres* and *Menyanthes trifoliata* were other species of interest. *Camptosorus rhizophyllus* was found at Little Falls, N. J., on October 3d, growing on a ledge of trap-rock, pointed out to the Club by Mr. Torrey.

Professor Porter sent for exhibition photographs of a decayed chip of *Quercus alba*, in which the medullary rays of the wood were shown persistent after the decay of most of the wood-cells.



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